IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Steven B. Elgee et al.

U. S. Serial No.:	10/062,758	Art Unit:	2853
Filing Date:	01/29/2002	Examiner:	Liang, Leonard S.
Title:	Scanning Carriage Heat Applicator		
Attorney Docket:	10013857-1		

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
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Sir:

BRIEF OF APPELLANT

This is an appeal from the Examiner's final rejection of all pending claims 1-11, 13-22, 24-27, and 29-42 as identified in the Office action dated July 30, 2003 and in the Advisory Action dated October 8, 2003.

Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

All pending claims 1-11, 13-22, 24-27, and 29-42 stand under final rejection and are herewith appealed.

The present application was filed January 29, 2002 with original claims 1-42. In response to the Office Action dated September 27, 2002, appellants amended claims 1, 3, 6, 13, 14, 22, 24, 25, 26, 27, 29, 30, 31, 32, 33, 34, 35, 36, 38, and 42. Also in response to the Office Action dated September 27, 2002, appellants cancelled claims 12, 23, and 28. In response to the Final Office Action dated April 15, 2003, appellants made no amendments to the claims. The Examiner withdrew the final rejection as stated in the Office Action dated April 15, 2003. In response to the next Final Office Action dated July 30, 2003, appellants responded without amendment to the claims.

Thus, claims 1-11, 13-22, 24-27, and 29-42 stand pending in the present application with the only amendment occurring in response to the first Office Action dated September 27, 2002.

Claims 1, 2, 5, 8-11, 13-17, 19-20, 22, 24-27, and 29-41 stand rejected under 35 USC Section 103 as allegedly obvious in light of Gandy and Meyers.

Claims 3-4, 18, and 21 stand rejected under 35 USC Section 103 as allegedly obvious in light of Gandy and Meyers, as applied above, and further in light of Carreira.

Claims 6-7 stand rejected under 35 USC Section 103 as allegedly obvious in light of Gandy and Meyers, as applied above, and further in light of Woo.

Claim 42 stands rejected under 35 USC Section 103 as allegedly obvious in light of Gandy and Meyers, as applied above, and further in light of Ort.

In each and every outstanding rejection the Examiner relies on an identical combination of Gandy and Meyers as base and secondary references.

Appellants attach hereto as APPENDIX A all pending claims including amendments entered in response to the Office Action dated September 30, 2002.

Status of Amendments

Appellants amendments as provided in response to the Office Action dated September 30, 2002 have been entered.

No additional amendments are pending.

Summary Of The Invention

According to one embodiment of the invention, an inkjet printing mechanism includes a bi-furcated carriage and a bi-furcated heating element. The bi-furcated carriage scans an inkjet printhead across the printzone with a first portion of the carriage located on a first side of the media in the printzone and with a second portion of the carriage located on a second side of the media in the printzone. The bi-furcated heating element is supported by the carriage with a first portion carried by the first portion of the carriage and with a second portion of the heating element carried by the second portion of the carriage. The first and second heater elements are maintained in face-to-face relation across the print zone. (FIGS. 1-11, Specification pages 4-14)

Additional embodiments include use of microwave heating elements (FIGS. 5-7C, Specification pages 9-12) and radio frequency (RF) heating elements (FIGS. 8-11, Specification pages 12-13)

According to another embodiment of the invention, a printing method includes placing media in a printzone for print imaging; reciprocating a first carriage across the printzone; projecting from the first carriage ink droplets as the print imaging; projecting from a first heater element on the first carriage radiant energy applied as heat energy to the media; and synchronously scanning a second carriage relative to the first mentioned carriage, the second carriage holding a heater element cooperative with the heater on the first carriage to apply the heat energy to the media, the first and second carriage being maintained in face-to-face relation with the media interposed therebetween. (FIGS. 1-11, Specification pages 4-14)

Additional method embodiments use of microwave heating elements (FIGS. 5-7C, Specification pages 9-12) and radio frequency (RF) heating elements (FIGS. 8-11, Specification pages 12-13)

Issues

1. Whether cited references Gandy and Meyers can be combined under 35 USC Section 103.

2. What is the proper combination of Gandy and Meyers if combinable under 35 USC Section 103.

3. Whether claims 1, 2, 5, 8-11, 13-17, 19-20, 22, 24-27, and 29-41 are unpatentable under 35 USC Section 103 as obvious in light of Gandy and Meyers.

4. Whether claims 3-4, 18, and 21 are unpatentable under 35 USC Section 103 as obvious in light of Gandy and Meyers, as applied above, and further in light of Carreria.

5. Whether claims 6-7 are unpatentable under 35 USC Section 103 as obvious in light of Gandy and Meyers, as applied above, and further in light of Woo.

6. Whether claim 42 is unpatentable under 35 USC Section 103 as obvious in light of Gandy and Meyers, as applied above, and further in light of Ort.

Grouping of Claims

Claims 1-11, 13-22, 24-27, and 29-42 do not stand or fall together, but instead are patentably separate. Claims 1, 14, 22, 27, 31, 38, and 42 are independent claims. Claims 2-1 and 12 depend from claim 1. Claims 15-21 depend from claim 14. Claims 24-26 depend from claim 22. Claims 29 and 30 depend from claim 27. Claims 32-37 depend from claim 31. Claims 39-41 depend from claim 38.

Argument

I. Introduction

Appellants respectfully submit that the Examiner has misstated the disclosure of a key reference serving to support a base combination under 35 SC Section 103 applied in every outstanding rejection. The misstatement is significant and undermines the entire set of obviousness rejections. When properly stated and applied under 35 USC Section 103, the disclosures of the cited references, even if combinable, fall well short of making obvious appellants claimed invention.

II. Standard of Review – Obviousness

All outstanding rejections presently under appeal deny grant of patent based on allegations of 35 USC Section 103 obviousness.

Obviousness is a question of law based on (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.,* 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). "In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art." *In re Fritch,* 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent." *In re Oetiker,* 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444(Fed. Cir. 1992).

"Where claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure." *In re Vaeck,* 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991) (citations omitted).

Appellants note that in each and every outstanding rejection the Examiner relies on an identical combination of Gandy and Meyers as base and secondary references. A failure under 35 USC Section 103 relative to the basic combination of Gandy and Meyers results in a failure of all outstanding rejections.

As noted above, the Examiner must present a *prima facie* case of obviousness or Appellants are entitle to a grant of patent.

As stated in the MPEP 706.02(j):

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

III. Remarks In Favor of Reversal

The Examiner has mischaracterized the disclosure of Meyers and relies on such mischaracterization in support of an obviousness rejection. In the Office Action dated July 30, 2003 at page 6, the Examiner clearly and incorrectly states:

> Meyers et al discloses:
>
> {claim 1} a bi-furcated heating element supported by the carriage, a first portion of the heating element being carried by the first portion of the carriage, a second portion of the heating element being carried by the second portion of the carriage...

Meyers does not show a carriage-mounted dryer. The dryer shown by Meyers is separate, i.e., downstream, from an associated printing device.

The text of the Meyers disclosure, as taken from the USPTO database, mentions the word "carriage" twice. In the background section, at col. 1 lines 30-34, Meyers mentions the Ort reference as including an air dryer mounted on a carriage. In the Specification, at col. 6, lines 40-44, Meyers notes that "Each step or drying zone can be one indexed swath wide and provide relatively uniform drying over a swath during the inkjet printer carriage scan time." Here Meyers coordinates drying zones within the dryer with indexed movement of media as output from a printer, i.e., as the dryer receives media downstream from the printer output.

Nowhere does Meyers teach, suggest, or indicate motivation for mounting the dryer of FIG. 3 within a printer and certainly not upon a printhead carriage.

Meyers does not show a bi-furcated dryer. The dryer shown by Meyers appears to be a box-form device with slotted media inlet and outlet. Meyers provides no teaching or suggestion of and lacks any motivation for construction in bi-furcated form.

Thus, Meyers teaches nothing more than a separate and stationary dryer receiving media output from a separate printing device. FIG. 3 of Meyers is a cross-sectional view having in appearance only by cross-sectional view separate upper and lower sections. In fact, Appellants fairly presume that structural elements not well illustrated in Meyers necessarily directly couple the upper and lower sections appearing in FIG. 3 of Meyers and presumably define some form of slotted media inlet and outlet.

Appellants have respectfully requested that the Examiner identify text of the Meyers disclosure teaching or suggesting bi-furcated dryer structure. Appellants have respectfully requested that the Examiner identify text of the Meyers disclosure teaching or suggesting

carriage-mounting of the dryer. Neither request has proven fruitful to further the Examiner's stated position that Meyers shows a bi-furcated carriage and bi-furcated heater elements.

The Examiner proposes mounting the dryer of Meyers upon the bi-furcated carriage of Gandy. More particularly, as stated in the Final Office Action dated July 30, 2003, the Examiner proposes:

> It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the heating elements of Meyers et al onto the carriages of Gandy et al. The motivation for the skilled artisan in doing so is to gain the benefit of actively drying the media in a rapid continuous manner so that no subsequent drying time is needed. (Office Action dated July 30, 2003, page 8)

As for the "heating elements of Meyers" to mounted upon the carriages of Gandy, the Examiner specifically identifies FIG. 3 of Meyers. (Office Action dated July 30, 2003, page 6)

The dryer of FIG. 3 as taught by Meyers is a stationary air dryer, i.e., applies air to media for the purpose of drying, operating adjacent to but externally of an associated printing device. While not specifically detailed in Meyers, the device is taken to be a stationary enclosure having a slotted feed path therethrough. Generally, the stationary dryer of Meyers allows media passage therethrough, e.g., along the slotted feed path, and can accept media as output from a printing device, e.g., at the speed of printer throughput.

Thus, Meyers teaches in FIG. 3 *stationary external* drying according to "two-stage" application of air at specific pressure and velocities relative to media moving in relation thereto. Stated simply, Meyers teaches an external box-form air dryer having a slotted pathway aligned along the media feed path.

The Examiner proposes mounting the dryer as shown in FIG. 3 of Meyers upon the bi-furcated printhead carriages of Gandy. Generally, the Examiner improperly asserts that both Meyers and Gandy show bi-furcated carriages and that both show bi-furcated carriage-mounted functions: bi-furcated carriage-mounted drying in Meyers and bi-furcated carriage-mounted printing in Gandy.

Unfortunately, Meyers simply does not show bi-furcated heating elements mounted on bi-furcated carriages. In fact, the device shown by Meyers does not mount upon any portion of a printer, but rather receives media as output from a printer. By misstating the disclosure of Meyers, i.e., as teaching a bi-furcated carriage-mounted heating function, the Examiner attempts to establish simplified case for obviousness, i.e., that both references show bi-furcated carriages and both references show bi-furcated carriage-mounted functions thereby making plainly obvious a combination thereof.

Recognizing that Meyers shows neither a bi-furcated carriage nor a bi-furcated heating function, however, changes dramatically the Examiner's stated grounds for obviousness. More to the point, the Examiner clearly fails to establish a *prima facie* case of obviousness when relying on such mischaracterization of Meyers.

Appellants are entitled to a proper characterization of the cited references to allow a proper analysis of applicable standards of obviousness. In this case, Appellants acknowledge that a proper characterization of Gandy is a teaching of a bi-furcated printhead carriage with printing functions provided at each carriage on opposite sides of media passing therebetween.

More importantly, Appellants insist that a proper characterization of Meyers is a teaching of a simple box-form stationary dryer positioned adjacent to and externally of a printing device and receiving media therethrough while applying specific "two-stage" stepped conditions of air pressure and velocity.

A. The Cited References Do Not Teach the Claimed Limitations

A combination of Gandy and Meyers lacks all claim elements and thereby fails to make obvious appellants claimed invention. Assuming, only for purposes of argument, that Gandy and Meyers could be properly combined under 35 USC Section 103, such combination lacks carriage-mounted bi-furcated heating elements; lacks a first carriage carrying a first heater element and a second carriage carrying a second heater element; lacks a moving heat zone generated by cooperative first and second heating elements moving synchronously with media interposed therebetween; and lacks bi-furcated means for applying heat energy to media wherein the bifurcated means for applying heat energy is supported by a carriage.

Appellants respectfully assert that a proper combination of Gandy and Meyers results in application of media as printed and output by the device of Gandy being applied downstream to a stationary and separate dryer as taught by Meyers. In other words, the obvious combination of Gandy and Meyers is to simply combine the two devices, the Gandy device operates to print on both sides of media while the Meyers device sits externally of the Gandy printer and receives the media at the speed of printer output.

Appellants do not claim such arrangement, i.e., attaching the Meyers device to receive the output of the Gandy printer, and a proper combination of Gandy and Meyers cannot support rejection under 35 USC Section 103.

Claims 1, 2, 5, 8-11, 13-17, 19-20, 22, 24-27, and 29-41 stand rejected as unpatentable under 35 USC Section 103 as obvious in light of Gandy and Meyers.

Each of claims 1, 2, 5, 8-11, and 13 includes reference to a bi-furcated carriage and to a bi-furcated heating element. The Examiner's proposed combination of Gandy and Meyers lacks reference to bi-furcated heating elements as mounted upon a bi-furcated carriage.

Accordingly, the rejection of claims 1, 2, 5, and 8-11 as obvious in light of Gandy and Meyers must be reversed.

Each of claims 14-17, 19-20, 22, and 24-27 reference a first carriage carrying a first heater element and a second carriage carrying a second heater element. The Examiner's proposed combination of Gandy and Meyers lacks reference to first and second carriages including corresponding first and second heater elements mounted thereon.

Accordingly, the rejection of claims 14-17, 19-20, 22, 24-27 and 29-30 as obvious in light of Gandy and Meyers must be reversed.

Each of claims 31-37 reference a moving heat zone generated by cooperative first and second heating elements moving synchronously with media interposed therebetween. The Examiner's proposed combination of Gandy and Meyers lacks reference to cooperative first and second heating elements moving synchronously with media interposed therebetween.

Accordingly, the rejection of claims 31-37 as obvious in light of Gandy and Meyers must be reversed.

Each of claims 38-41 reference bi-furcated means for applying heat energy to media wherein the bifurcated means for applying heat energy is supported by a carriage. The Examiner's proposed combination of Gandy and Meyers lacks reference to bi-furcated means for applying heat energy to media wherein the bifurcated means for applying heat energy is supported by a carriage.

Accordingly, the rejection of claims 38-41 as obvious in light of Gandy and Meyers must be reversed.

Because all subsequent rejections expressly rely on the base combination of Gandy and Meyers, including mischaracterization of Meyers as stated above, all subsequent obviousness rejections must be reversed for failure of the base combination of Gandy and Meyers.

Furthermore, the remaining obviousness rejections must be reversed for failure to include all limitations of the claimed invention.

Claims 3-4, 18, and 21 stand rejected under 35 USC Section 103 as obvious in light of Gandy and Meyers, as applied above, and further in light of Carreira.

Like Meyers, Carreira shows nothing more than a separate heating device, in this case a microwave device, operating downstream relative to printing operations. In fact, a word search of the Carreira disclosure yields no mention of the word "carriage." Adding Carreira to the combination of Gandy and Meyer does nothing to complete the requisite claim elements needed to reject claims 3-4, 18, and 21.

Accordingly the rejection of claims 3-4, 18, and 21 as obvious in light of Gandy and Meyers, as applied above, and further in light of Carreira must be reversed.

Claims 6-7 are stand rejected under 35 USC Section 103 as obvious in light of Gandy and Meyers, as applied above, and further in light of Woo.

Woo discloses RF reactive media. A word search of the Woo disclosure yield no mention of the word "carriage." Adding Woo to the combination of Gandy and Meyer does nothing to complete the requisite claim elements needed to reject claims 6-7.

Accordingly, the rejection of claims 6-7 as obvious must be reversed.

Claim 42 stands rejected under 35 USC Section 103 as obvious in light of Gandy and Meyers, as applied above, and further in light of Ort. Ort discloses a printhead carriage bearing an outlet blowing heated gas onto media during printing operations. Ort fails to reference a bi-furcated heating element with first and second portions maintained in face-to-face opposition as referenced in clam 42.

Accordingly, the rejection of claim 42 as obvious must be reversed.

B. The Proposed Combination is Inoperative

Incorporating the dryer of Meyers onto the carriage of Gandy frustrates or makes inoperative the drying objective as taught by Meyers. The cited references do not offer a reasonable expectation of successful operation when combined in the manner proposed by the Examiner.

Mounting the dryer as taught by Meyers upon a moving device, i.e., the carriages of Gandy as proposed by the Examiner, results in undesirable or failed operation of the dryer.

First, the heating elements of Meyers cannot be mounted on both the carriages of Gandy as proposed by the Examiner. Meyers does not show or suggest that the device of FIG. 3 operate

as a bi-furcated heating device as alleged by the Examiner. Thus, it is simply not possible to "mount the heating elements of Meyers upon the carriages of Gandy." The "carriages" of Gandy operate on opposite sides of media passing therebetween. Because the heating elements of Meyers operate as a unified or "box-form" device, i.e., not as a bifurcated device, one must chose which one of the carriages of Gandy are to receive the heating elements of Meyers.

Placing the heating elements of Meyers on one of the carriages of Gandy precludes passage of media therethrough and thereby precludes media drying as proposed by the Examiner. Thus, even if the heater elements were incorporated into the device of Gandy, media drying would not occur.

Second, an inherent conflict in movement relative to media feed direction frustrates or makes impossible media drying as proposed by the Examiner. The carriages of Gandy move transversely relative to the media feed direction. The heating elements of Meyers receive media longitudinally relative to the media feed direction. Importantly, Meyers utilizes such longitudinal movement along the media feed direction to establish specific air pressures and velocities as the media moves therepast. More particularly, Meyers establishes certain drying zones along the media feed path. Moving the heating elements transversely, such as when mounted upon a carriage, disrupts or makes impossible progression of media along the longitudinally arranged heating zones.

Thus, even if the heating elements of Meyers were separated or bi-furcated for mounting upon the carriages of Gandy, the resulting transverse movement of the heating elements, i.e., relative to the media feed direction, frustrates the stated "two-stage" use of specific air pressures and velocities graduated along the media feed direction. In other words, Meyers teaches how to dry with conditions varied along the media feed direction, but such is not possible when the heating elements move transverse to the media feed direction.

Third, mounting the dryer of Meyers as proposed by the Examiner causes undesirable ambient airflow resulting from carriage movement. Meyers teaches a stationary air dryer with specific air pressure and velocity regions along the media feed path. The drying function of Meyers becomes frustrated or impossible when employed as a moving device. It should be noted that the heating device of Meyers when modified as proposed by the Examiner requires not only longitudinal openings, i.e., along the media feed direction, but also lateral openings to accommodate transverse movement of the combined carriage and heater elements.

In other words, bi-furcating the Meyers device for mounting upon a bi-furcated carriage as proposed by the Examiner, significantly opens the device relative to ambient air and offers disruption within the device, especially when placed in motion along with the carriage.

Thus, even if the dryer of Meyers were bi-furcated and mounted Meyers on the carriages of Gandy as proposed, significant additional ambient air would enter the dryer in and around the media. A moving, i.e. carriage-mounted, form of dryer, i.e., a dryer as taught by Meyers, could not accomplish the drying objective of Meyers, i.e., could not perform the "two stage" drying process due to uncontrollable ambient airflow. As the dryer elements moved with the carriages as proposed by the Examiner, undesirable airflow enters and exits along the media surface. Such intervening incoming and exiting airflow would upset the balance and control of airflow required to meet the drying objective of Meyers, i.e., the "two stage" drying process would be at least frustrated and quite possibly inoperative all together.

Thus, any obviousness rejection relying on a proposed combination of Gandy and Meyers fails under 35 USC Section 103 as inoperative for <u>at least one</u> of the following reasons: i) the Meyers device is not a bi-furcated heater and cannot be mounted on more than one carriage and if mounted on one carriage cannot be positioned to receive media therethrough; ii) dryer operation relies on longitudinal movement relative to media feed direction and carriage mounting frustrates such dryer operation; and iii) bi-furcating the Meyers heating device and mounting on

separate carriages introduces sufficient undesirable ambient airflow to frustrate drying operations as taught by Meyers.

C. No Motivation Exists For The Proposed Combination

The Examiner's stated motivation to combine the dryer of Meyers with the printer of Gandy is improper because such would result no improvement and therefore not be worth the substantial cost and likely inoperability of the resulting combination.

More particularly, the Examiner cites as motivation for the skilled artisan the language at column 2 lines 16-22 of the Meyers disclosure. The Examiner alleges that the skilled artisan would be motivated to incorporate the heating elements of Meyers onto he carriages of Gandy "to gain the benefit of actively drying the media in rapid continuous manner so that no subsequent drying period is needed."

The dryer taught by Meyers already performs such task, i.e., rapid active drying with no subsequent drying period needed. The Meyers dryer accepts media from the printer at the speed of printer output and performs active "two-stage" drying in real time relative to printer throughput. Incorporating the stationary and separate dryer of Meyers onto the moving carriage of Gandy would require substantial redesign of both the printer and the dryer with no benefit, i.e., no improvement in throughput, because the Meyers dryer already operates at the speed of the printer.

A skilled artisan would not, when seeking to actively dry media with no subsequent drying period as stated by the Examiner, completely redesign the printer and dryer at substantial cost and potential frustration and/or inoperability. The Meyers dryer can be applied directly to

the output of the Gandy printer as proposed by Meyers and perform well task of active drying at the speed of printer throughput.

Again, an obvious combination of Gandy and Meyers is simply feeding the output of Gandy, i.e., freshly printed media, downstream into the dryer of Meyers.

Appellants respectfully submit that the teachings of Gandy and Meyers provide no motivation for such substantial re-engineering when no gain in throughput is achieved. In other words, Meyers provides a solution to drying at printer throughput speed and one does not gain in this aspect of operation by moving the dryer onto the carriage.

Conclusion

The Examiner has failed to show proper suggestion or motivation for the proposed combination of Gandy and Meyers, has failed to show a reasonable likelihood of successful operation of the proposed combination of Gandy and Meyers, and has failed to show the claim limitations in the proposed combination of Gandy and Meyers.

The Examiner has failed to meet the burden of presenting a prima facie case of obviousness as required as Appellants are entitled under a 35 USC Section 103 rejection. The prima facie case of obviousness must be based on the cited references. In the present application, the basic combination of Gandy and Meyers lacks the requisite claim elements and lacks a reasonable expectation of success. Neither reference presents sufficient suggestion or reasonable expectation of success if combined. The additional cited references of Carreira, Woo, and Ort fail to complete the requisite claims limitations or offer a reasonable expectation of successful operation. The Examiner is left with the base combination of Gandy and Meyers as a feeble foundation for rejection under 35 USC Section 103. As a result, the prior art simply does not make obvious appellants claimed invention and all outstanding rejections must be reversed.

Respectfully submitted

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CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the US Postal Service as First Class Mail, in an envelope addressed to: MS Appeal Briefs-Patents Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450, on the date indicated below.

Date 12/19/03

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Appendix A

CLAIMS INVOLVED IN THE APPEAL

1. (Previously Amended) An inkjet printing mechanism, comprising:

a media support which supports print media in a printzone;

a bi-furcated carriage which scans an inkjet printhead across the printzone, a first portion of said carriage located on a first side of said media when in said printzone, a second portion of said carriage being located on a second side of said media when in said printzone; and

a bi-furcated heating element supported by the carriage, a first portion of said heating element being carried by said first portion of said carriage, a second portion of said heating element being carried by said second portion of said carriage, said first and second heater elements being maintained in face-to-face relation across said print zone.

2. (Original) An inkjet printing mechanism according to claim 1 wherein said heating element comprises a microwave heating element.

3. (Previously Amended) An inkjet printing mechanism according to claim 2 wherein said microwave heating element includes a bi-furcated waveguide spanning said first portion and said second portion of said heating element and defining a heat zone therebetween.

4. (Original) An inkjet printing mechanism according to claim 3 wherein said heat zone scans synchronously with said carriage.

5. (Original) An inkjet printing mechanism according to claim 1 wherein said heating element comprises a radio frequency heating element.

6. (Previously Amended) An inkjet printing mechanism according to claim 5 wherein said radio frequency heating element includes as said first portion first electrodes and as said second portion second electrodes, a heat zone being positioned therebetween.

7. (Original) An inkjet printing mechanism according to claim 6 wherein said heat zone scans synchronously with said carriage.

8. (Original) An inkjet printing mechanism according to claim 1 further including a stationary blower producing an airflow directed at media when in the printzone.

9. (Original) An inkjet printing mechanism according to claim 1 wherein said heating element comprises a radio frequency applicator.

10. (Original) An inkjet printing mechanism according to claim 1 wherein said heating element comprises a microwave applicator.

11. (Original) An inkjet printing mechanism according to claim 1 wherein said printhead directs ink droplets into said printzone and onto said media, and said heating element creates a heat zone at a surface of said media.

12. Cancelled

13. (Previously Amended) An inkjet printing mechanism according to claim 1 wherein said first and second heating element portions define a gap therebetween, said gap comprising a heat zone generated by said heating element.

14. (Previously Amended) An inkjet printing mechanism comprising:

a printzone;

a first carriage located on a first side of said printzone, said first carriage supporting an inkjet printhead and a first heater element portion; and

a second carriage located on a second side of said printzone, said second carriage holding a second heater element portion, said first and second heater element portions forming a heater element and being maintained in face-to-face opposition across said printzone.

15. (Original) An inkjet printing mechanism according to claim 14 wherein print media in the printzone has a print surface exposed to the printhead to receive ink therefrom, and has an opposing surface opposite the print surface.

16. (Original) An inkjet printing mechanism according to claim 15 wherein said first side of said printzone faces the media print surface and wherein said second side of said printzone faces the media opposing surface.

17. (Original) An inkjet printing mechanism according to claim 14 wherein said inkjet printhead projects ink droplets into said printzone as print imaging on media when in said printzone, said print imaging receiving heat energy from said heater element.

18. (Original) An inkjet printing mechanism according to claim 14 wherein said first heater element portion comprises a microwave energy source and a first portion of a waveguide;

said second heater element portion comprises a microwave load and a second portion of a waveguide;

said first and second waveguide portions together forming a waveguide directing microwave energy from said source to said load; and

said printzone occupies space between said first portion of said waveguide and said second portion of said waveguide.

19. (Original) An inkjet printing mechanism according to claim 14 wherein said first and second heater element portions cooperatively form a microwave applicator.

20. (Original) An inkjet printing mechanism according to claim 14 wherein said printing mechanism synchronously scans said first carriage and said second carriage to maintain a selected alignment therebetween.

21. (Original) An inkjet printing mechanism according to claim 20 wherein said heating element is a microwave heating element, with at least one of said first carriage and said second carriage holding a microwave load and the other one of said first carriage and said second carriage supporting a microwave source.

22. (Previously Amended) A method of applying print imaging by ink droplet deposition on media and drying said print imaging, the method comprising the steps:

reciprocating a first carriage across a printzone;

projecting from said first carriage ink droplets as said print imaging;

projecting from a first heater element on said first carriage radiant energy applied as heat energy to said media; and

synchronously scanning a second carriage relative to said first carriage, said second carriage holding a second heater element cooperative with said first heater element to generate and apply said heat energy to said media, said first and second carriage being maintained in face-to-face relation with said media interposed therebetween.

23. Cancelled

24. (Previously Amended) A method according to claim 22 wherein said first and second heater elements comprise a microwave heater.

25. (Previously Amended) A method according to claim 22 wherein said first and second heater elements comprise an RF heater.

26. (Previously Amended) A method according to claim 22 further comprising controllably advancing media in a feed direction through said printzone.

27. (Previously Amended) A printing method, comprising:

placing media in a printzone for print imaging;

reciprocating a first carriage across said printzone;

projecting from said first carriage ink droplets as said print imaging;

projecting from a first heater element on said first carriage radiant energy applied as heat energy to said media: and

synchronously scanning a second carriage relative to said first mentioned carriage, said second carriage holding a heater element cooperative with said heater on said first carriage to apply said heat energy to said media, said first and second carriage being maintained in face-to-face relation with said media interposed therebetween.

28. Cancelled

29. (Previously Amended) A method according to claim 27 wherein said first and second heater elements comprise a microwave heater.

30. (Previously Amended) A method according to claim 27 wherein said first and second heater elements comprise an RF heater.

31. (Previously Amended) A printing method, comprising:

applying ink having an evaporatable component to a print media; and

thereafter, moving a heat zone across said media to accelerate evaporation of said evaporatable component, said heat zone being generated by cooperative first and second heating elements moving synchronously and relative to said print media and cooperative to produce said heat zone, said first and second heating elements being maintained in face-to-face relation with said print media interposed therebetween.

32. (Previously Amended) A method according to claim 31 wherein said moving comprises scanning said first and second heating elements across said print media.

33. (Previously Amended) A method according to claim 31 wherein said applying comprises scanning a printhead across said media.

34. (Previously Amended) A method according to claim 31 further comprising generating said heat zone using microwave heating produced cooperative by said first and second heating elements.

35. (Previously Amended) A method according to claim 31 further comprising generating said heat zone at opposing surfaces of said media.

36. (Previously Amended) A method according to claim 31 further comprising generating said heat zone from RF heating produced cooperative by said first and second heating elements.

37. (Original) A method according to claim 31 further comprising advancing said media through said printzone between each of a series of said applying and said moving.

38. (Previously Amended) An inkjet printing mechanism comprising:

means for reciprocating a carriage relative to a printzone;

printing means for applying print imaging to media in said printzone and supported by said carriage means; and

means for applying heat energy to said media and supported by said carriage means, said means for applying heat energy being bifurcated and including cooperative first and second heater elements, said first heater element being positioned at a first side of said media and said second heater element being maintained in face-to-face opposition therewith at a second side of said media.

39. (Original) An inkjet printing mechanism according to claim 38 wherein said means for applying heat energy comprises a microwave energy source.

40. (Original) An inkjet printing mechanism according to claim 38 wherein said means for applying heat energy comprises an RF energy source.

41. (Original) An inkjet printing mechanism according to claim 38 wherein said printing means comprises an inkjet printing device projecting ink droplets therefrom.

42. (Previously Amended) An inkjet printing mechanism comprising:

a reciprocating printing device projecting ink droplets therefrom along a print swath, said print swath having a print swath height; and

a reciprocating bifurcated heating element projecting energy therefrom and applied as heat energy to media adjacent thereto along a heat swath height, said heat swath height being greater than said print swath height whereby print imaging produced by said ink droplets receives said heat energy through at least a first and second reciprocation of said heating element, said bifurcated heating element including a first portion maintained at a first side of said print swath and a second portion maintained at a second side of said print swath in face-to-face opposition to said first portion.